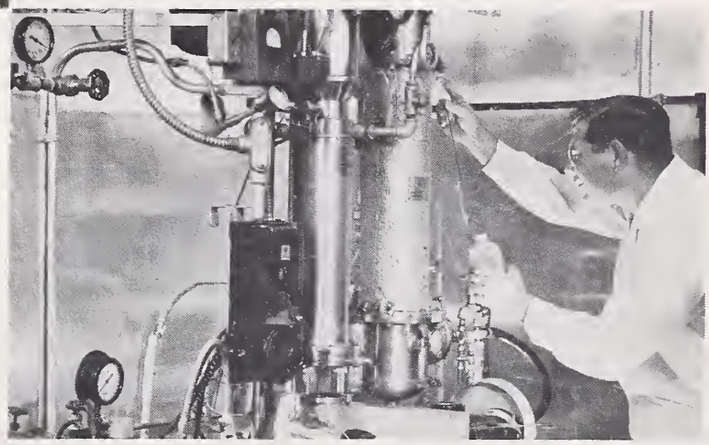
NEW USES FOR FARM PRODUCTS

BN-7031X - This is typical of the USDA utilization research buildings. Together the four regional laboratories constitute the world's largest and best equipped facilities for research on the utilization of farm products. Their discoveries promise wider and more profitable markets for the high productive capacity of our farms.

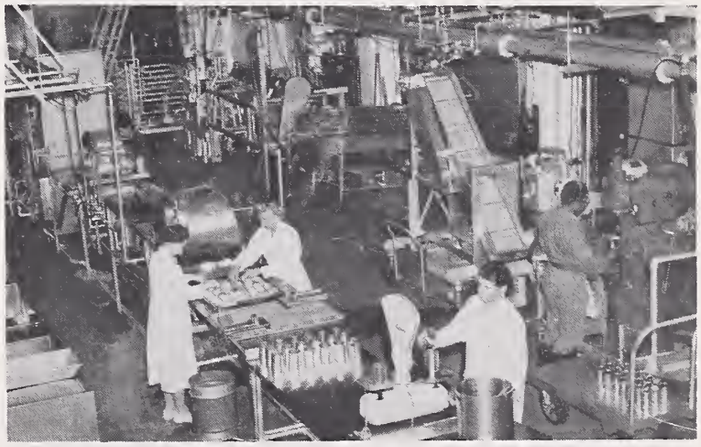
Science and technology have a key role in the efforts of the U. S. Department of Agriculture to increase present uses for farm products and find new profitable uses for them. These efforts are being concentrated on farm commodities that are in general or seasonal surplus. How well these efforts are succeeding is indicated in the research accomplishments pictured here. Some of the products and processes are already in commercial use, others are still in experimental or pilot-plant stages but with bright promise for the future.

The Department has four regional laboratories devoted to utilization research--Northern at Peoria, Ill., Southern at New Orleans, La., Eastern at Wyndmoor, Pa., and Western at Albany, Calif. These laboratories are headquarters for the four regional Research and Development Divisions of the Agricultural Research Service. Each Division does research on problems of national scope with special attention to farm products important in its region.

Scientists at these laboratories are placing their main emphasis on finding ways to convert farm commodities, especially those in general or seasonal oversupply, into raw materials for industrial use. In addition they are developing processed foods and treatments for natural fibers that provide the top quality with built-in convenience that today's consumers want.



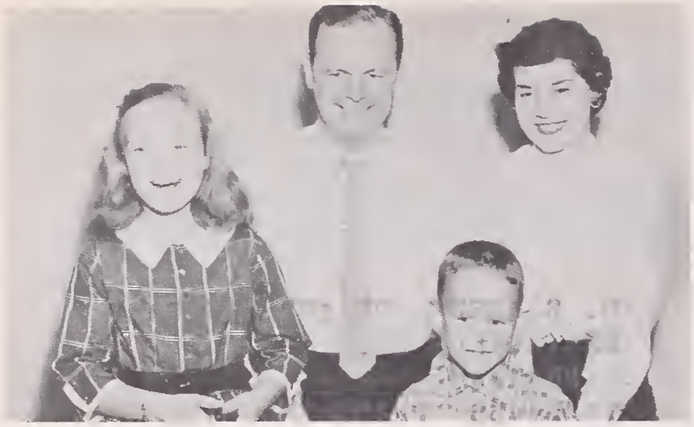
N-19594 - The highly trained staff of scientists and technologists apply many modern techniques to the problems they are studying. Among these techniques are: electron microscopy, spectrophotometry, x-ray diffraction, radioactive-tracer techniques and microanalytical methods.



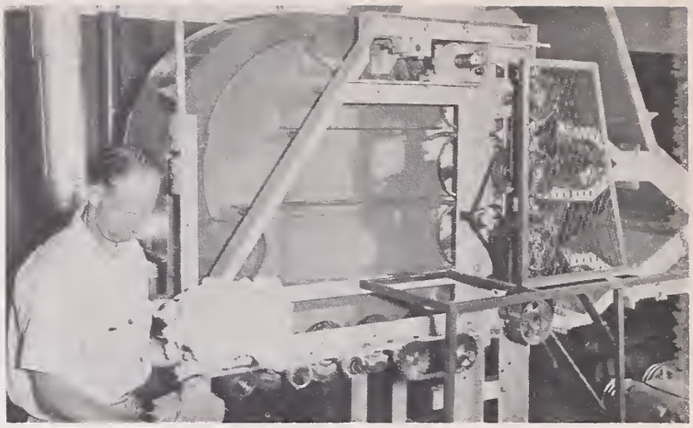
BN-8437X - Each utilization research laboratory has facilities to convert test-tube findings into successful production methods on a pilot-plant scale. This one is a large scale food processing laboratory.

U. S. DEPARTMENT OF AGRICULTURE
Office of Information

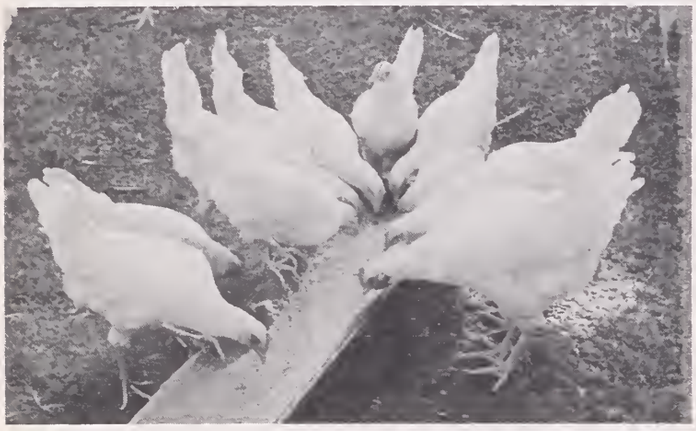
Picture Story No. 118
August 1959



BN-8432X-Wash-and-wear cottons for the whole family are here, thanks to the resin finishes developed jointly by USDA scientists and industry. Cotton can also be made flame-, oil-, water-, and wrinkle-resistant, as needed. Aided by research this good fiber is increasing its share of the apparel market.



BN-5582-This cotton opener-cleaner saves cotton processors $100 a day per machine. It fluffs matted cotton, removes trash, wastes little. It is one of many devices developed by USDA research to reduce processing costs of cotton.



N-2313-Poultry and swine flourish on rations that use over ¼ million tons of nutritious cottonseed meal a year. To make this possible USDA research contributed processing methods that eliminated toxic effects of the cottonseed pigment, gossypol.

N-7949-Yeasts, molds, and bacteria from USDA's world collection serve scientists to transform grains into many useful new products: antibiotics, vitamins, organic acids, pesticides, cleaning agents. Here a biochemist transfers culture of a yeast that produces riboflavin, vitamin B-2, an ingredient of many mixed feeds.

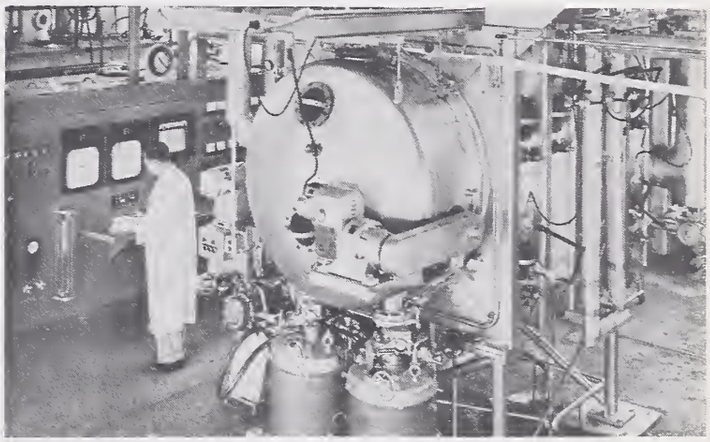
BN-8436X-Transparent edible film covering for food is one of a variety of possible uses for amylose starch--starch from a new kind of corn. USDA research is aiding in developing uses for and in breeding high-amylose corn.

BN-8304-X-Pastes from chemically modified flours are potentially useful as thickening agents, adhesives, and coatings and sizes for paper. Chemists treated hard red wheat flour with ethylene oxide to make the superior paste shown here.

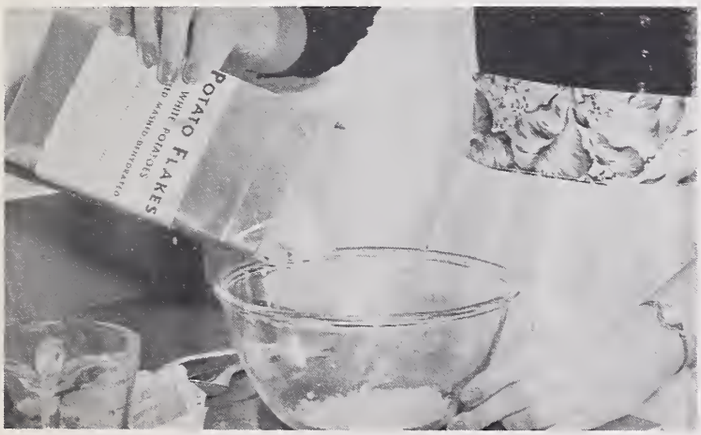
BN-8224X-Paint that doesn't drip is made with chemicals from soybean oil. Other uses for research-developed chemicals from soybean oil are: plasticizers, lubricants, protective coatings.

BN-7029X-Raincoats, umbrellas, garden hose, made of vinyl plastic are more pliable because of plastic softeners from animal fats. USDA research showed how to make these superior plasticizers. The result: a market for 35 million pounds of epoxidized animal fats per year.

BN-7027X-Corn tanned this fine leather. USDA chemists modified corn starch to make dialdehyde starch, then found that it made a good tanning agent, among other uses. If accepted to replace imported tannins, this could provide a market for up to 10 million bushels of corn.



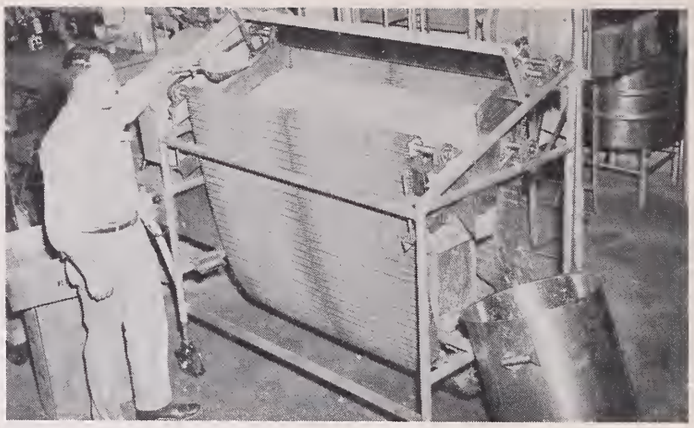
BN-7020X-Instant milk powder with long shelf life and the good taste of whole milk would increase milk consumption and add nutritive value to the Nation's diet. Research to perfect a process for large scale output is underway in this utilization laboratory.



N-19652-Potato flakes and granules that make mashed potatoes in moments are on grocery shelves as a result of utilization research. In this convenience-food form we are using 20 million bushels of potatoes, and the demand is growing.

BN-7016X-Nutritious powdered fruit juice concentrates recently developed supplement frozen juice concentrates in which USDA also had a big hand. The dry form is needed where refrigeration is impracticable and storage space is limited. The crew of the atomic-powered submarine Nautilus enjoys them.

BN-1778-The light compact pack of apple slices at left was produced by a new process--dehydrofreezing --originated by USDA scientists. Quick drying reduces weight and bulk. Then the product is frozen to preserve flavor and make reconstitution easy.



BN-7048X-For the drying step of dehydrofreezing, research has developed this belt-trough dryer, which dries large quantities of product rapidly and uniformly. This device, now in commercial use, also contributes to more efficient conventional drying of fruits and vegetables.

N-30684-Woolens that will take repeated washings in a home-type washer and retain shape, appearance, and normal good qualities of wool may soon be on the market, as a result of chemical treatment being developed by USDA researchers. Treated and untreated garments are compared here.

BN-8433X-This scientist is studying time-temperature tolerance of frozen foods . . . . his laboratory a freezer. Some frozen foods lose quality 15 to 20 times faster at 10 F. than at zero. These findings are aiding handlers and distributors maintain high quality of frozen foods in storage.

BN-8434X-Research on naval stores--pine gum and its main derivatives, turpentine and rosin--has revolutionized the industry. New processes and equipment have improved quality and reduced cost of production. More recently new products from pine gum have been introduced.

For a complete story about utilization research write for single free copies of Agricultural Information Bulletin No. 209, "New Uses for Farm Products," available from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.